

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

## PCT

### WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/GB2005/000125

International filing date (day/month/year)  
14.01.2005

Priority date (day/month/year)  
14.01.2004

International Patent Classification (IPC) or both national classification and IPC  
C07F9/48, C07F17/02, B01J31/00

Applicant  
STYLACATS LIMITED

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1 (a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**International application No.  
PCT/GB2005/000125**AP20 Rec'd PCT/PTO 13 JUL 2006****Box No. I Basis of the opinion**

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
  - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:
    - ☐ a sequence listing
    - ☐ table(s) related to the sequence listing
  - b. format of material:
    - ☐ in written format
    - ☐ in computer readable form
  - c. time of filing/furnishing:
    - ☐ contained in the international application as filed.
    - ☐ filed together with the international application in computer readable form.
    - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/GB2005/000125

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**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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**1. Statement**

Novelty (N)	Yes: Claims	1-9
	No: Claims	10-13
Inventive step (IS)	Yes: Claims	4,5,9
	No: Claims	1-3,6-8
Industrial applicability (IA)	Yes: Claims	1-9
	No: Claims	

**2. Citations and explanations**

**see separate sheet**

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**Box No. VIII Certain observations on the international application**

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The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

**see separate sheet**

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING  
AUTHORITY (SEPARATE SHEET)**

**10/586204**

International application No.

PCT/GB2005/000125

**Re Item V.**

AP20 Rec'd PCT/PTO 13 JUL 2006

1 Reference is made to the following documents:

D1 : WO 03/031456 A (SOLVIAS AG; BERENS, ULRICH) 17 April 2003 (2003-04-17)

D2 : ARGOUARCH G ET AL: "A New Class of Ferrocene-Based 1,2-Bis(phosphanes) Possessing only Planar Chirality" EUROPEAN JOURNAL OF ORGANIC CHEMISTRY, WILEY-VCH VERLAG, WEINHEIM, DE, 2000, pages 2893-2899, XP002196647 ISSN: 1434-193X

D3 : US 6 194 593 B1 (IMAMOTO TSUNEO ET AL) 27 February 2001 (2001-02-27)

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CLAIMS 10-13

Claims 10 and 11 of the present application are directed to chiral ligands being ortho-substituted and in which the ortho substituent has the formula  $PR^1R^1$ .  $R^1$  and  $R^1$  are different from each other. Such compounds are described for instance in D3, claim 1 and D2, compounds 1 ("DIPAMP") and 4 and in the documents cited in the application under footnote (23). Details with respect to these documents can be taken from the search report.

In this context it should be noted that European boards of appeal have consistently decided that claims for products defined in terms of processes for their preparation ("product-by-process" claims) are admissible only if - apart from any other conditions the products themselves fulfil the requirements for patentability, i.e. in particular if they are new and involve an inventive step.

It follows that "product-by-process" claims in general have to be interpreted in an absolute sense, ie independently of the process. Therefore, if the novelty of a "product-by-process" claim is at issue, novelty has to be examined and assessed independently of the potential novelty of the process.

As to claim 12, see D3, claim 4

As to claim 13, see D3, column 1, lines 46-59.

Hence, claims 10 -13 lack novelty over D1-D3

### 3.1

#### INDEPENDENT CLAIM 1

The preparation method according to D1 claims 1-4 (part a) includes the preparation of chiral ligands. The claims also contains the option of a different definition for Z\*3 and Z\*4 or T (in the case of claim 4). However there is no example in Do of such compound and preparation method therefor.

The subject-matter according to claim 1 is, therefore novel.

In view of the above document D1, the subject-matter of independent claim 1 cannot be considered inventive (Article 33(3) PCT) for the following reason : the claimed process is a selection from the general description in claim 1 of D1 and the skilled person could work in analogy to example 5. In order to prepare the wanted compounds the skilled person needed only to replace reagent Cl-P(NMe<sub>2</sub>)<sub>2</sub> by an analogous compound in which the non halogen substituents are different from each other.

### 3.2

#### DEPENDENT CLAIMS 2,3, 6-8

Dependent claims 2,3, 6-8 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step (Article 33(2) and (3) PCT).

As to the additional features of claim 3, see the prior art ligands PPFA, BPPFA and BPPFOH, shown in the application at page 2.

"Intermediate" according to claim 8 is not considered as a distinguishing feature.

**3.3**

**DEPENDENT CLAIMS 4,5, 9**

The combination of the features of dependent claims 4,5 and 9 are neither known from, nor rendered obvious by, the available prior art. The reasons are the absence of the features "chiral auxiliary" and "R<sup>1</sup>"-bearing Grignard reagent or organolithium compound" in the cited prior art.

**Re Item VIII**

**Certain observations on the international application**

The backreference in claim 4 to claim 3 does not seem to be correct because the definition "achiral" is inconsistent with the definition of X\* in claim 3.